

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. XCIX. — THURSDAY, DECEMBER 5, 1878. — NO. 23.

REFLEX SYMPTOMS IN HIP DISEASE.¹

BY EDWARD H. BRADFORD, M. D.

SYMPTOMS which may be classed as reflex, common to all joint affections, are of particular importance in hip disease from the anatomical relations of the joint, surrounded as it is by large and powerful muscles.

I. The first of these, stiffness or limited motion at the hip-joint, has always been regarded of value in diagnosis.²

Mr. Marsh, in a recent lecture says: "Stiffness at the joint affords direct evidence of hip disease, so that in a vast majority of cases it is an aphorism that if it be present the joint is affected, while if absent the joint is sound."³

Mr. Holmes writes: "Coincidentally with early symptoms of hip disease is a stiffness of the joint, which appears to me the best and earliest test of the affection."⁴

Valette writes: "Avec l'intégrité des mouvements de la hanche pas de coxalgie."⁵

To learn the value of this symptom I have examined with care the mobility at the hip-joint in one hundred patients, in half of whom hip disease existed at various stages, and in the remainder either the joint was healthy or some affection was present liable to be confounded with hip disease.

Examination for limited motion is most readily made by placing the patient on a hard surface, as the floor or a table. The leg is held by the examiner, each thigh gently flexed, the amount of *flexion* without force noted. The amount of abduction, adduction, and rotation should be observed both when the limb is flexed and when extended.

The patient should be then turned on to his belly, and the amount of extension (motion in the opposite direction to flexion) determined by noting the extent to which the thigh can be lifted without raising the sacrum.

¹ Read at the annual meeting of the Massachusetts Medical Society, June 11, 1878.

² Holmes, *System of Surgery*, vol. iv., page 85. Sayre, *Orthopædic Surgery*, page 234 et seq.

³ *British Medical Journal*, July 21, 1877.

⁴ *Surgical Treatment of Children's Diseases*, page 441.

⁵ *Nouveau Dict de Med. et Chir.*

In health the amount of extension is in almost all cases¹ sufficient to allow the examiner to press the popliteal surfaces upon the level on which the patient lies (upon the back) without arching up the back or twisting the pelvis in the manner figured in Bonnet's work and in Dr. Sayre's book on Orthopædic Surgery.

In frightened children and in nervous patients passive motion often excites considerable muscular resistance. The limb may be held stiff. This normal muscular resistance, as it may be called, I have always found the same at both hip-joints, a fact of value in diagnosis. This resistance differs, in a way which is not easily described, but readily noticed, from that encountered on moving a thigh when the hip-joint is affected.

Individuals vary as to the extent of motion at the hip-joint, but this in any one person in health will always be found the same at both joints.²

The following cases well illustrate the amount of motion at the hip-joint seen in hip disease:—

CASE I. L., boy of healthy appearance, three and one half years old. Had been noticed to limp slightly with the right limb for a few weeks. Did not complain of pain, but three days previous to the time when first seen had complained of slight pain on getting out of bed. On examination no more limitation of motion could be found at the right hip-joint than at the left. Motion in all directions (flexion, extension, abduction and adduction, and rotation) was remarkably free and smooth. Extension sufficient to allow pressing the right popliteal surface and the lumbar spinous processes on the same plane without causing any obliquity of the pelvis (Bonnet-Sayre test); no tenderness to be found in the region of the hip-joint; no pain evinced during examination. The examination was made with care, and was repeated by others with a like

¹ In one of the healthy cases which I examined I found it impossible to press either popliteal surfaces upon the floor without arching the back; the child was frightened and resisted examination. I found this also the case on examining the motion at the hip-joint of a still-born child.

² The Weber brothers found that the arc of flexion and extension at the hip-joint was in the cadaver, the soft parts being removed, 139°; the arc of abduction and adduction, 90°; of rotation, 51°. In living subjects the arc of flexion and extension was 86°, or, according to Nicaise, 90°. In the living subjects I have examined I found the arc of flexion and extension greater than this.

In two adults, where the arcs of motion were carefully noted, I found 135° and 112° the arc of flexion; abduction and adduction, 63°, 69°.

In a still-born child (the muscles not having been divided) the arc of flexion and extension was 112°; of abduction and adduction, 90°.

In the cadaver of an adult the muscles of the thigh having been partially cut away, the arc of flexion was 110°. When the cadaver was laid on the belly, the thigh could be lifted, without raising the sacrum (extension), 15°. If the limb was abducted slightly, extension was freer than when moved in the line of the body. This is due to the fact that the gluteus minimus is inserted on outer and anterior aspect of the trochanter. When the limb is abducted slightly this muscle is not so quickly made tense as when the limb is straight.

result. A second examination, a few days later, gave a similar result. On a third examination, a week later, the motion at the right hip-joint was found, in flexing and in extending, slightly limited (5° to 10°). In a few days the child complained of stiffness in the morning when getting out of bed. This passed away in the course of the day, as the child played about. In a short time the patient was seized by a severe attack of pain in the groin. This was relieved by extension and rest in bed. In a few weeks the child was allowed (against advice) to run about, and in the course of six months the disease at the joint had progressed to the suppurative stage of hip-joint disease, with the formation of abscess and the usual characteristic symptoms.

This case was seen at a very early stage, and is the only one, among the fifty which I examined, where limited motion was not found. It is interesting as disproving the aphorism of Valette:¹ "Avec l'intégrité des mouvements de la hanche pas de coxalgie." This symptom soon appeared.

CASE II. D., well-nourished child, five years old. Suffered one year and a half before from brief severe attacks of pain in the left groin, considered rheumatic, at intervals of three and six months. These attacks lasted about a week, after which the child was able to play about freely without suffering pain. A severe attack of pain occurred in the spring of 1877. Examination after recovery from this attack showed that flexion at the hip-joint was easy in an arc of 10° . No extension or abduction was possible. The limb was held slightly flexed. The disease progressed, and in a few months there was no motion at the hip-joint. Severe nocturnal pains occurred, and the usual symptoms of hip disease followed.

CASE III. L., girl, nine years old, seen after recovery from a severe attack of pain in the groin. Flexion at the hip-joint easy in an arc of 90° . Resistance encountered on abducting and extending. The limb kept ordinarily in a position of slight flexion. The case did not come under treatment, and within six months the characteristic symptoms of hip disease, with suppuration at the joint, appeared.

CASE IV. F., aged nine, hip disease of two years' duration, attended with the formation of abscess. The limb had been kept in good position by treatment, but there was no motion at the joint.

The amount of limited motion therefore varies. This was found in all the cases of hip disease examined. Motion was limited to an equal degree in flexing and in extending. In the lighter cases the limitation of flexion is less readily estimated than extension, and therefore less valuable as a symptom. Abduction is almost invariably limited.

In stages of acute pain the thigh is held stiff; motion becomes freer after the painful stage is passed.

¹ Nouveau Dict. de Med. et Chir.

Limited motion at the hip-joint was found in some other affections than hip-disease. It was marked in two rather unusual cases of what may be called "sprain" at the hip-joint, an affection which has, according to Bonnet,¹ not received due attention.

CASE V. W., healthy boy four and one half years old, had been perfectly well until three days before examination. While playing had jumped and fallen down a short flight of steps. He suffered some pain after the fall, but walked about afterwards without complaint. On the following night, however, suffered some pain in the region of the right hip-joint. This was at no time severe. The boy limped in walking, and was unable to walk any distance.

On examination by Dr. Post, of Boston, and myself, it was found that the right thigh could be flexed only in an arc of 80° without causing muscular resistance. The left thigh could be easily flexed in an arc of 120° . Abduction of the right thigh was more limited than of the left. No difference could be detected in rotation. Extension at the left hip-joint was free, but was limited at the right, it being impossible to press the right popliteal surface upon the floor without arching the back, although this could be done with the left. The boy continued to improve without treatment, being allowed to run about. The pain soon ceased and did not return, except that once, a fortnight after the accident, the patient complained of slight pain in the groin. When examined, three months later, no limitation to motion was found; and on a third examination, nine months later, the motion at the right hip-joint was found equal to that in the other, and was perfectly smooth. The boy had been entirely free from pain or limping in gait since a short time after the accident, and had played about as usual.

CASE VI. C., adult, aged thirty, was thrown by the lurch of a steamboat suddenly forward and to the left. The patient did not fall, recovering himself by a violent effort, but suffered sharp pain behind and above the trochanter, and was unable to move without pain for several minutes.

When examined, two days later, some tenderness was found in pressing on and behind the trochanter. No pain was caused on flexion or extension. Passive motion in the left limb less free in the direction of abduction than in the right; in other directions the amount of motion at both joints was equal. The patient limped considerably in walking, but this passed off in a few days without any treatment.

Limited motion was found at the hip-joint in the following case, where a positive diagnosis is not possible:—

CASE VII. A healthy child, five years old, was suddenly seized, without known cause, with severe pain in the left limb, located chiefly at

¹ Il faut étudier les entorses (de la hanche) dont l'étude est aussi importante que négligée. (Bonnet, *Mal. des Art*, T. ii., page 200.)

the groin, which was increased on any attempt at motion. The left thigh was held flexed. At the end of two days the pain had subsided, and the child got up and walked about, but was seen to limp with the left limb.

When the child was examined, a few days later, no pain or tenderness could be discovered at the hip-joint, and the child had complained of none since the first attack. There was slight stiffness at the left hip-joint, it being impossible to place the popliteal surface of the left limb on the floor without arching the back. This limited motion in the direction of extension was quite marked when the patient lay on her face with the thigh lifted. There was also a slight limitation to flexion on the left side. A second examination, made by Dr. C. P. Putnam, of Boston, gave a similar result.

The child was kept quiet in bed for a month, after which time she played about as usual. The limited motion was not found a fortnight after the original attack of pain, and on repeated subsequent examinations the motion at both hip-joints was found the same. There has been up to the present time, seven months after the attack of pain, no recurrence of pain, limping in gait, or peculiarity in the position of the limb, and the child has enjoyed perfect health.¹

In several cases of caries of the spine, extension of the thigh was found limited, but flexion remained normal.

In a case of obscure abdominal abscess, perhaps "perinephritic," the same was true in a very marked degree.²

In two patients suffering from what was considered caries of the trochanter, not involving the hip-joint, flexion of the thigh was quite free, but the limb could not be extended from the slightly flexed position in which it was held; there was thickening of the femur about the trochanter and sinuses leading down to the femur.

In a few cases where some of the symptoms would suggest hip disease, perfectly free motion was found, as follows:—

(a.) Sciatica in an adult, in a subacute stage. The thigh was held by the patient, slightly flexed and adducted. The motion at the joint was perfect.

(b.) Inflamed glands in the groin of a child, caused by a contusion. The thigh was flexed and adducted; there were swelling and tenderness in the groin. The motion in all directions, in extension as well as flexion, was free.

(c.) In two cases of the rare affection, sacro-iliac disease, which I saw through the kindness of Dr. Poore, of New York,³ the motion at

¹ It is possible that this case may have been one of beginning hip disease, where recovery took place in the month of rest.

² *Am. Journal Obstetrics*, April, 1876. Several cases of this affection, simulating hip disease, are reported by Dr. Gibney.

³ *Am. Journ. Med. Sciences*, January, 1878.

the hip-joint on the affected side was free and smooth. This is said to be the rule in this affection.¹

Limitation to motion has been mentioned by authorities as having been seen in various affections.

Bouchut has observed a contracted condition of the flexors of the thigh (and hence a limitation of motion in extending the limb) in a case of infantile paralysis, which, from the position of the limb, suggested hip disease. This condition is rare. In the cases of infantile paralysis affecting one lower extremity, which I have seen, the motion at the hip-joint was much freer on the affected than on the normal side.

M. Verneuil has recently described a contraction of the adductors simulating hip disease. There is an awkwardness in gait and an interference in abduction and extension, but not in flexion.² Both limbs are usually affected.

In the affection called "hysterical" coxalgia, "neuralgia" of the hip-joint (Brodie), the thigh at times will be held perfectly stiff.³

In muscular rheumatism, affecting muscles about the hip-joint, there is said to be a stiffness on moving the thigh from the pain caused; this is entirely different from the painless resistance encountered in early hip disease.⁴

In the only case of muscular rheumatism of muscles of the thigh which I have examined the motion at the hip-joint was quite free.

In acute inflammatory affections of the hip-joint, other than hip disease proper, the joint is held stiff.

In morbus coxæ senilis (arthritis sèche) there is stiffness at the hip-joint similar to that seen in commencing hip disease.⁵ A diagnosis must be based on the age of the patient.⁶

The conclusions to which I am led, from the examinations made, may be summed up as follows:—

Stiffness or limited motion of the hip-joint may rarely be wanting at the very commencement of hip disease, contrary to what has been taught.

The symptom is, however, an early and constant one; much more so than the presence of pain or tenderness.

¹ Nicaise, *Diagnostic des Maladies de la Hanche*. Paris, 1869.

² *Gaz. des Hôpitaux*, July 28, 1877.

³ Barwell's *Diseases of Joints*. Brodie's *Neuralgia of Joints*. Nicaise, *Diagnostic des Maladies de la Hanche*, page 92. Jacobi, *Am. Journal Obstetrics*, June, 1876, page 218. Albert, *Wiener Klinik*, second series, *Hüftgelenkkrankheit*. Taylor, *New York Med. Record*, 1875, page 321. Philleppaux, *Gaz. hebdomadaire*, No. 10, 1867.

⁴ Pour reconnaître la contracture rhumatismale de la hanche on emploiera la faradisation de la hanche, qui la fera bientôt cesser. (Nicaise, *Diagnostic des Maladies de la Hanche*.)

This is not the case in hip disease.

⁵ Robert Adams's *Rheumatic Gout*.

⁶ Verneuil, *Gaz. des Hôpitaux*, February 19, 1878.

This limited motion may be so slight as to be detected only by the exercise of great care, or may be enough to cause complete stiffness of the joint. The amount depends probably upon the activity and duration of the process.

The symptom is also seen in other diseases of the hip-joint.

In certain affections about the joint, but not involving it, in muscular contractions from various causes, there may be limitation to motion. This symptom is not an early one, and differs from the resistance encountered in the early stage of hip disease. In hip disease the motion of the thigh is limited both in flexing and in extending to an equal degree. In affections not involving the joint, the limitation to motion is not so uniform; flexion may be possible to the usual amount, while the motion of extension may be absent.

Resistance to motion to an equal degree in all directions is highly characteristic of a joint affection.

(To be concluded.)

MEDIASTINAL GROWTHS.¹

BY F. F. MOORE, M. D., ALLSTON, MASS.

REVIEWING very briefly the literature relating to tumors of the mediastinum, we find that comparatively little is said upon the subject in our text-books, for the reason, no doubt, that little of a definite nature is as yet known, and the question of the causation, origin, diagnosis, prognosis, and treatment of these growths opens up a large and intensely interesting field for further research. Able investigators have already been at work, however, and through their efforts some light has been thrown upon the matter, and the following facts may be considered as fairly established. The ætiology of these growths is very obscure. Injury, catching cold, etc., have been given as causes, but their influence, if they have any, must be simply of an exciting nature. The question of hereditary transmission is a more important one, and demands further investigation, as little is known in this relation at present. According to Hertz, in Ziemssen's *Cyclopædia*, only particular forms are inherited, such as certain cystic growths. Statistics, so far as they go, would seem to prove that sex has an influence, males being much more frequently attacked than females. With regard to age, they are found more commonly in the young and middle aged, or from twenty to forty. Coming now to the pathological anatomy of these growths we find that the most common forms are sarcomata and carcinomata. Cysts and simple hyperplasia of the lymphatic glands are rare, and fibromata are still more uncommon. Sarcoma generally oc-

¹ Read before the Middlesex South District Medical Society, October 9, 1878.

curs as lympho-sarcoma. Carcinoma appears usually in the medullary form, more rarely as scirrhous. Virchow gives a mixed form of tumor, which is called sarcoma-carcinomatousum. The seat of these tumors is oftenest in the anterior mediastinum, less often in the posterior, sometimes in both. They may occur as solitary or multiple growths. Sarcoma and carcinoma may take their origin in the lymphatic glands of the neck, or in the tracheal and bronchial glands; more rarely they start from the pericardium or from the periosteum of the sternum, or they may commence in the fat and connective tissue of the mediastinum. The duration of the disease varies according to the nature of the growth; the sarcomata and the medullary form of the carcinomata generally taking a rapid course, while the scirrhous and fibrous tumors are often of long continuance. The prognosis admits of but one opinion, no case of recovery being on record. The diagnosis is always difficult, and often impossible. The treatment can only be supporting and palliative.

The following case is of considerable interest in this connection:—

A young man, twenty-two years of age, a dental student, came to me June 15th with the following history: The father had, when about forty years old, "scrofulous glands" in the neck, which discharged pus for some time, and finally healed up. A brother died twelve years ago, in his fortieth year, of "tubercular meningitis" with tubercular deposits in the lungs. Two other brothers, older than the patient, are troubled with "chronic sore throat." The patient himself was well up to January last, with the exception of some dyspeptic symptoms dating back a year or more, but which had been less troublesome latterly. At the date mentioned he began to lose strength, getting tired easily, but still keeping hard at work at his studies. In the following April a slight cough, with a scanty mucous expectoration, came on. About May 1st the patient noticed an enlargement of the thyroid gland on the right side, and two weeks later on the left side also. During this time the general prostration continued, and becoming somewhat anxious about his condition he consulted me, as stated, in June. At this time he was still engaged in his studies, but was much debilitated, and complained of difficulty of breathing upon exertion. He walked bent over, and said he had noticed that he was getting round-shouldered for some months previously. If he endeavored to straighten himself up, or to lie down flat on his back, it caused pain and distress beneath the sternum, and cough. For a month past he had had an occasional feeling of numbness in the right arm and hand, and several attacks of giddiness, though no pain in the head at any time. He complained of a very troublesome itching of the skin, confined chiefly to the legs, which disturbed sleep at night. The patient was free from pain at this time, and his chief complaint was of

debility and difficulty of breathing on exercise. Though strongly advised to give up work and rest, he continued his studies until the close of the annual examinations in the latter part of June. He then went out of town for a vacation, but, not gaining in health as he expected to, he came home at the end of a week, feeling worse in every way. For a few days after returning he could walk out-of-doors, though not for long distances, on account of weakness and shortness of breath. Finally he was obliged to keep within doors, and was soon confined to his room. This was in the latter part of July, and from that date to the termination of the case the patient was under daily observation, and was also often seen by Drs. Bowditch and Knight in consultation. Drs. Whittier, Marcy, and Field were also called in to the case at different times. Frequent and careful physical examinations were made, with the following general result:—

Thyroid gland markedly enlarged on right side, and to a less extent on left side. Some œdema of space between the glands in the neck; also slight œdema around the eyes. Superficial veins over right chest and sternum very prominent. Enlargement of right chest noticeable, and measurement showed a difference of nearly an inch between the two sides. On percussion, flatness over the right chest in front down as far as the sixth rib, and over the upper two thirds of the sternum, the flatness extending around into right axillary space. Weak bronchial respiration and bronchophony heard over the region of flatness, and over the sternum a peculiarly high pitch of voice. No râles. Heart-sounds normal, but heard loudest and apex-beat felt a little below and to the outside of usual point. No murmur over the enlarged thyroid. No prominence of eyeballs. No subclavian or aortic murmur. No difference in pulse at wrist. Respirations from 22 to 28; pulse 112 to 128, small and weak; temperature 99° to 100° and 101°. Urine normal. The earlier examinations discovered nothing abnormal over the left chest, nor on the right side behind, but later dullness appeared over the lower part of both backs, always much more marked on the right side. No râles were heard at any time in either chest. The voice was not affected. There was a persistent pharyngitis, with at times thrush-like deposits. A peculiar piping noise was heard accompanying respiration, especially marked when the patient was lying down. The extremities were cold. There was no cachexia developed during the course of the disease, and the loss of flesh was not excessive. The mind was clear excepting when under the influence of narcotics. At one time there was a slight difficulty of swallowing, but this passed off. The appetite was variable, but as a general thing the patient took nourishment readily, and bore it tolerably well. The bowels, regular at first, were somewhat free later on, but there was nothing characteristic about the stools. The dyspnoea became more and more marked,

amounting at times to orthopnœa, and there were several attacks of an asthmatic nature, characterized by labored breathing, lividity of face, etc., with sibilant and sonorous bronchi over both chests. August 7th, Dr. Bowditch advised thoracentesis, which was accordingly performed by him, and three and two thirds pints of a clear, serous fluid were withdrawn from the right chest, in which the microscope failed to detect any pus cells. Tapping was repeated by Dr. Knight on the same side at three subsequent dates, and from two and one half to three and one half pints of fluid of the same character as at first were drawn off each time. Fluid was thought to be present also in the left chest, but not in sufficient quantity to require its removal.

The patient continued to grow steadily weaker. Pain, after a time, became a very persistent and troublesome symptom, located chiefly in the dorsal region behind, and in the left hypogastrium. There was no pain of any consequence in the chest, though it was quite sensitive to percussion. Cough, though subject to occasional exacerbations, was not at any time a prominent symptom, and the sputa remained scanty and of a mucous character.

At one time there came on a remarkable eructation of gas from the stomach, the patient belching it up in such quantities as at times to interfere seriously with respiration; it seemed to bear no relation to the food ingested, but continued the same when all food was withheld. It resisted all treatment for some time, but was finally relieved by the inhalation of ether. It was thought that this symptom might have a nervous origin, coming under the head of the neuroses. The nights were very distressing; the patient could not lie down in bed on account of the orthopnœa and pain in the back and side, and slept at short intervals, in a half-sitting posture, with head and shoulders supported by a French's apparatus. Finally he showed a tendency to pass into a condition of stupor, and died in an attack of this nature on the morning of October 2d.

Autopsy by Dr. Marcy, fifty hours after death. Rigor mortis not very marked. Dark purple spots on hands, particularly on the left hand, from the size of a pea to that of a dollar. Dependent portions of body dark from hypostatic congestion. Tissues over sternum œdematous. Sternum closely adherent to diseased mass below for three quarters of its extent, and tissues between fourth, fifth, sixth, and seventh ribs infiltrated with new growth. Five pints of a clear, straw-colored fluid taken out of right chest. Right pleura-costalis normal. Three and one half pints of fluid taken from left chest, delicate adhesions between pleural surfaces on this side, and pleura-costalis deeply injected. Pericardial fluid slightly increased in quantity. Heart normal. Lungs with new growth removed entire, and with difficulty, being everywhere adherent over upper portion of thorax. Weight of

mass removed six pounds. Left lung compressed, upper portion by tumor, lower portion by fluid. Several pea-sized masses of infiltrated new growth in upper lobe, otherwise healthy. Upper lobe of right lung fused in a mass of tumor, and perhaps infiltrated by it; a portion of its tissues normal, but solidified by pressure; lower portion compressed, otherwise normal. Lying chiefly in the right mediastinal space was a very firm, hard, whitish mass; this compressed the trachea from behind forwards, so that its walls were nearly in contact. The arch of the aorta was completely surrounded and compressed in the same direction as the trachea. Three quarters of the pericardium was encased by the growth as by a cast. The mass cut with a firm resistance and a gritty feel. On section it showed plainly an alveolar structure, with points of fatty degeneration, in places infiltrated with a dark pigment, similar to that of the bronchial glands. The lesser curvature of the stomach was depressed by a growth of a similar character, about the size of the fist. The mesenteric glands in large numbers were infiltrated. The spleen measured five and one half inches in length by four inches in width, and was considerably increased in weight; it contained several nodules, from the size of a pea to that of an English walnut. Kidneys normal. Liver somewhat enlarged, and markedly fatty. Thyroid gland not examined.

Specimens were sent to Dr. E. G. Cutler, of Boston, for examination, who reported as follows: "The lung was not diseased. There was an enlarged and knobbed condition of the bronchial glands, and on bisecting the tumor composed of them it was distinctly seen to be composed of single, more or less oval bodies, which had run together. The portion examined was in the uppermost part of the thorax, and extended around the bronchial tubes, compressing one somewhat, following them into the lung, and always being distinctly separable into single distinct glands. These had enlarged and become fatty or caseous in the centre; the enlargement had not confined itself to the gland, but there was a peradenitis which had enlarged each individual gland. In other words there was a proliferation of gland tissue (lymphatic gland) which did not confine itself to the ordinary wall of the same, but broke through and extended its boundaries. There were secondary deposits in the spleen. On microscopic examination of the structure in the chest and in the spleen it was found to be histologically a lympho-sarcoma, with the connective-tissue portion predominating. Therefore the case was one of lympho-sarcoma of the bronchial glands, with a secondary metastasis in the spleen (very common), all consecutive to the same enlarged and diseased condition of the glands in the neck."

In giving the history of this case the details of treatment have not been entered into; the indications were simply to sustain life and relieve suffering, and these were carried out so far as was possible.

The diagnosis was a matter of some difficulty. By Dr. Knight the case was believed to be lympho-sarcoma of the bronchial and mediastinal glands, and this opinion was maintained by him to the end. The prognosis was not a question of any doubt. Most of the symptoms present in the case are readily explained by the pressure of the diseased growth on the air-passages, and on the important vessels and nerves within the chest, giving rise to the disturbances of respiration, the interference with the circulation, etc.

RECENT PROGRESS IN DERMATOLOGY.

BY JAMES C. WHITE, M. D.

Faulty Innervation a Factor in Skin Diseases. — Dr. Wigglesworth discusses this question in an article,¹ in which, after citing many examples previously reported by observers, he gives a detailed account of two cases of injury to the nerves of the arm, which was followed by prolonged tissue changes in the integument of the hand.

Warts for Skin-Grafting. — Dr. Leale, of New York, reports² a case of extensive burn of the foot which could not be made to heal under ordinary surgical appliances, its surface of granulating tissue remaining irresponsive even to epithelial scrapings. He then removed two large warts from the patient's hand by transverse incision through their proximal parts, tore each wart into quarters in the direction of its papillæ, and planted the eight pieces in little cuts at equidistance about a line below the level of the granulating tissue. The wound was then covered with lint spread with balsam of Peru ointment. Two days afterwards the grafts were found alive, and they continued to grow until they were joined together, forming a continuous covering to the wound. The cicatrix, when formed, measured three by four and a half inches. Attention has already been called to the new formation of epidermis by the transplanting of hairs.³ If success in this case were due to the overactivity of the cells in the papillary growth employed, it might be worth while to make trial in similar cases of the cells in a state of excessive hyperplasy, as found in the efflorescence in psoriasis, for instance.

Inoculability of Skin Diseases. — Vidal, in a communication to the Geneva International Congress, gives⁴ the results of his experiments in this comparatively new field of research, which he has been cultivating for several years. They may be briefly stated as follows: ecthyma he

¹ Hospital Gazette, March 1, 1878; also account of nerve section in one of the cases by Dr. J. J. Putnam in Journal of Nervous and Mental Disease, July, 1878.

² New York Medical Record, September 7, 1878.

³ See JOURNAL, June 1, 1878.

⁴ Annales de Dermatologie et de Syph., tome ix., No. 5.

finds to be both inoculable and auto-inoculable. All varieties recognized by authors he has been successful with. Fluids taken from the new pustules may be successively cultivated until a fourth or fifth generation is obtained. The third crop is generally incomplete, and the fourth succession insignificant. He regards it as a well-marked generic affection, and patients inoculate themselves, he believes, by scratching. With impetigo contagiosa he has also been successful as to its auto-inoculability in more than half his attempts. With herpes labialis and preputialis he made more than twenty experiments, but succeeded only in two. Upon a healthy person he obtained no results. He has never obtained a second generation, but states that Douaud has. He believes, therefore, that herpes is only exceptionally inoculable. Pemphigus in its ordinary form he has not been successful with in the two cases experimented on, and he doubts the possibility of its auto-inoculation. With the epidemic form of new-born children, however, success is easily obtained, and this explains, in his opinion, its supposed contagious character. It is both inoculable and auto-inoculable, and bullæ of the second and sometimes of the third generation may be produced. The diseases with which Vidal has failed to obtain successful results are eczema, zoster, "vesicular hydroa," and molluscum contagiosum.

The Pathological Histology of Psoriasis. — Dr. Robinson, of New York, publishes¹ under this title another of his valuable contributions to our knowledge of the structural changes in skin diseases. He finds in the early stage of the disease (*P. guttata*) that the papillæ are but very slightly developed, although apparently increased in size, owing, as he believes, to a growth downwards of the Malpighian layer in its interpapillary portion. In the papillæ and surrounding part of the corium the blood-vessels are enlarged, and round bodies are seen, which in his opinion are epithelial cells in process of growth. The universal hyperplasia of the mucous layer he regards as the primary step in the process, and an independent one, preceding the enlargement of the blood-vessels and papillæ. Within the papillæ, in addition to the enlargement of the capillaries, transudation of serum and the presence of numerous white blood corpuscles were observed. In the external root-sheath of the hair follicle a similar hyperplasia was found, especially at the root. In the more advanced stages of the disease the rete cells continue to be excessively produced and to spread farther inward, the blood-vessels to dilate, and the surrounding cell infiltration and œdema to extend farther and deeper into the corium. During the period of disappearance of the disease the dilatation of the vessels and the cell infiltration along their course diminish, the Malpighian prolongations becoming smaller, until the hyperplasy wholly and latest disappears.

Dr. Robinson calls attention to the absence of all cell infiltration into

¹ New York Medical Journal, July, 1878.

the connective tissue apart from the immediate neighborhood of the blood-vessels, in which respect the affection differs from eczema. Indeed, he regards psoriasis as not an inflammatory disease of the papillæ or upper corium, but, as above stated, primarily a hyperplasia of the rete mucosum. Like Auspitz, he, too, assigns to this portion of the epidermis the independent power of cell development and of a downward growth into the corium.

Is Psoriasis a Parasitic Affection? — It seems almost incredible that this question could be raised in a legitimate way, and by one occupying a conspicuous place among modern dermatologists. Nevertheless Professor Lang discusses it¹ at length, and with apparent good faith. Knowing well that the ordinary means of determining such questions furnishes, when applied in this instance, a negative answer, he proceeds to study what clinical points it has in common with vegetable parasitic diseases. The result is a most ingenious comparison of the close resemblance in many respects which exists between them. It shows that psoriasis might very well consistently be a parasitic disease if it only were, but he does not show that it is, and the microscope shows positively that it is not.

Carbolic Collodion in Psoriasis. Dr. Galuzinsky, of St. Petersburg, recommends² that the affected portions of skin be brushed over with one part crystallized carbolic acid dissolved in four parts of collodion. The application need not be repeated as long as it remains fixed to the skin. Pain follows, lasting ten or fifteen minutes. In a few days the eruption appears smooth and shining. The treatment must be continued as long as the skin is red or infiltrated, and may require three or more months. Where the disease is extensive the application should be made to cover all the parts gradually, for fear of poisoning.

Pyrogallic Acid in the Treatment of Psoriasis. — Jarisch³ has been led to try the action of this substance upon the skin in psoriasis on account of its near chemical relationship to chrysophanic acid. In thirteen cases he obtained results with a salve, one part to four, fully as favorable as with chrysophanic acid salve of twenty per cent. strength, and without any accompanying dermatitis.

Local Treatment of Eczema. — Dr. Piffard, professor of dermatology in the New York University, in a recent article⁴ on this subject, advises the hypodermic injection of arseniate of sodium into patches of infiltrated eczema. He uses solutions of one fifth, one half, and one per cent. For a single patch of moderate size a single injection of five to ten minims of the one per cent. or one half per cent. solution is made. If the patch is larger, or if there are several of them, the weaker solu-

¹ Vierteljahresschrift für Derm. und Syph., v. Jahrg., 3 Heft.

² Cincinnati Lancet and Clinic, October 5th, from Med. Wochenschrift, No. 33, 1877.

³ Vierteljahresschrift für Derm. und Syph., v. Jahrg., from W. med. Bl., No. 7, 1878.

⁴ Medical Record, October 26, 1878.

tions are employed, and two or more punctures made in the larger patches or distributed among the smaller ones. The injections are to be repeated at intervals of two or three days. He has seen no undue reaction from them. Another method employed by him to reduce infiltration is the application of some of our native "acro-narcotics" to the affected parts. Among these hydrastis and its derivatives occupy in his opinion the first rank, and next in usefulness the iris versicolor. Of the latter he makes a tincture from the root, and rubs this up with simple ointment until the alcohol has evaporated. By these means he believes the absorptive function of the capillaries is stimulated.

The Treatment of Eczema by the Glycerole of Lead Acetate. — Drs. Duhring and Van Harlingen, of Philadelphia, have been testing the action of this substance upon the skin in eczema, as advised by Squire. They give¹ the results of its use in fourteen cases of the disease, by which they are led to the following conclusions: It is a valuable addition to the therapeutics of certain forms of chronic eczema, particularly *e. rubrum* of the lower extremities. It is most useful in those cases where the affection is extensive, of a dusky hue, accompanied by much weeping and infiltration of the skin, together with swelling and oedema of the subcutaneous tissues, and a full and varicose condition of the venous circulation. In such cases glycerole of the subacetate of lead, used with diligence and followed by careful bandaging, constitutes a remedy of the highest value. It has, however, no anti-pruritic qualities, excepting in so far as it may reduce the oedema, which sometimes seems to give rise to pruritus. Nor has it any resolvent effect upon infiltration of the more superficial layers of the integument. In this respect it fails just in those cases and at that stage of *e. rubrum* where the skin is no longer acutely inflamed, but is thickened, indurated, and pruriginous; in other words, where ordinarily the preparations of tar and potash are most useful. It fails, moreover, to exert a favorable influence in those cases of *e. rubrum* where the disease shows itself in numerous variously-sized superficial patches, and where the deeper layers of the skin do not appear to be affected. With regard to its effect in the vesicular and squamous varieties, it is less favorable as the case departs from the typical form of *e. rubrum*. Occasionally it is found to disagree with the skin, but not nearly so often as in the case of glycerine.

Oleate of Zinc in Eczema. — Dr. Crocker reports² the successful treatment of several cases of this affection with oleate of zinc ointment. Its most striking effects are seen in the discharging stage, and it never is over-stimulating in its action. It is prepared by stirring together one part by weight of oxide of zinc with eight fluid ounces of oleic acid,

¹ Philadelphia Medical Times, August 3, 1878.

² British Medical Journal, October 26, 1878.

and after letting it stand two hours heating it until the zinc is entirely dissolved. On cooling it forms a yellowish-white, hard mass, which can be made into a soft ointment by the addition of one part of vaseline or olive oil, or two parts of lard. With the former it does not become rancid. It may be applied to the diseased skin spread upon cloth or thin paper, after the method of using diachylon ointment.

Rubber Bandages in the Treatment of Eczema and Ulcers. — Dr. Bulkley, in a paper¹ read before the New Hampshire Medical Society, gives the results of his experience with the solid rubber bandage of Dr. Martin, not only in chronic ulcers of the leg, as first recommended by the latter gentleman, but also in several forms of eczema of the part, detailing twenty-seven cases. The bandage is made of pure rubber, should be ten or twelve feet long and about three inches wide, and provided with firmly attached tapes at the free end. It should be applied in the morning before the patient leaves the bed, and not too tightly at first, the object being to support the relaxed tissues of the skin and its vessels, not to check the circulation. One or two turns should be taken around the bottom of the foot, and then avoiding the heel the bandage should be wound about the leg without "reversing" up to the knee, where it is to be secured by the tapes. There should be nothing between the rubber and the skin. At bed-time it is to be removed, carefully washed with water until perfectly free from the retained perspiration and discharges from the diseased skin, and left unrolled to dry over night. For the first day or two it may cause some discomfort to the patient, but afterwards is worn without inconvenience. We can vouch that it will be found to be serviceable in many cases of chronic eczema, especially in those accompanied by deep infiltration and in those dependent upon a varicose condition of the blood-vessels. Dr. Bulkley states that he has applied it with benefit even in acute and subacute forms of eczematous inflammation. Of its great service in the majority of cases of chronic ulcer of the leg both Dr. Martin and Dr. Bulkley offer abundant testimony. The bandage should be worn in all cases for some little time after the cure seems complete.

Acne. — Dr. Fox, of New York, in a paper² read at the recent meeting of the Dermatological Association, presents his views upon the proper use of this term, with which we think most modern students of dermatology will agree. He would restrict it, like Hebra, to the purely inflammatory affections of the follicles, and would remove from close alliance with it the affection commonly called acne rosacea, a condition characterized by a new formation of vascular and cellular tissue, and in which the sebaceous glands are often only secondarily disordered. The above association, in its recently published system of classification,

¹ Archives of Dermatology, July, 1878.

² Archives of Dermatology, October, 1878.

have removed it from the "inflammations" and placed it under hypertrophies of connective tissue.

In a recent lecture¹ upon the general treatment of acne, Dr. Taylor, of New York, gives most excellent practical advice for the management of all forms of the disease, publishing many formulæ which he has tested fully. He believes in the use both of internal and external remedies in the majority of cases, and relies mostly upon alkalies and arsenic among the former, not even failing to commend mercury in some cases. As Dr. Taylor says, the successful treatment of acne depends largely upon attention to details, so it would be unfair to attempt to give an account of this valuable lecture without presenting his views in such detail as our space does not permit. Some day we hope to see published side by side the results and duration of treatment in two series, fifty each, of cases of ordinary acne, in one of which only local remedies, in the other mixed treatment, have been employed.

(To be concluded.)

THE AMERICAN PUBLIC HEALTH ASSOCIATION AT RICHMOND.

THE YELLOW FEVER CONFERENCE.²

THE yellow fever commission unanimously reported their preliminary conclusions on the second day of the meeting, and these are given entire from the fact of their positive statement of points still in dispute even in New Orleans, after a very incomplete investigation occupying only about a month's time, and because of their not containing a single allusion to the sanitary condition of any of the towns visited, bad as that is very well known to be, and important as most sanitarians consider it in estimating the causes of an epidemic or the means of preventing future outbreaks.

(1.) We have not in a solitary instance found a case of yellow fever which we could justifiably consider as of *de novo* origin, or indigenous to its locality.

(2.) In respect to most of the various towns which we visited, and which were points of epidemic prevalence, the testimony showing importation was direct and convincing in its character.

(3.) The transmission of yellow fever between points separated by any considerable distances appeared to be wholly due to human intercourse. In some instances the poison was carried in the clothing or about the persons of people going from infected districts. In other instances it was conveyed in such fomites as cotton-bagging, or goods of some description, or bedding and blankets.

(4.) The weight of testimony is very pronounced against the further use of disinfectants. Physicians in infected towns, almost without exceptions, state that they are useless agents to arrest the spread of yellow fever, while some of them affirm that their vapors are seriously prejudicial to the sick.

¹ Seguin's Series of American Clinical Lectures, vol. iii., No. x.

² Concluded from page 699.

(5.) Personal prophylaxis, by means of drugs or other therapeutic means, has proved a constant failure. A respectable number of physicians think the use of small doses of quinine of some use in prevention.

(6.) Quarantines established with such a degree of surveillance and rigor that absolute non-intercourse is the result have effectually, and without exception, protected those quarantines from attacks of yellow fever.

The third day of the session, after a breezy discussion of the right of the assembly to refuse to listen to a repetition of uninteresting details, and after the reference of several resolutions to the proper committees in order to save time, was devoted chiefly to the consideration of reports of personal experience with regard to the recent epidemic.

Colonel Hardee, sanitary engineer, gave an interesting account of the topography of New Orleans. The city has probably a population of not far from two hundred and thirty thousand. Its death-rate is high, but that subject was not reported upon in any of the papers read, and it is not easy to get at the particulars with regard to the matter. From February to May inclusive New Orleans lies below the level of the Mississippi River, being protected from inundation by levees. There is no under-ground drainage; about one mile in ten of the streets is well paved; the surface sewers are usually of wood in various stages of decay, allowing a varying amount of deposit of filth, according to the absence or not of rains;¹ the sewage and surface washings which do not soak into the ground collect in inadequate surface canals or reservoirs, to be pumped by four machines into open ditches leading ultimately into Lake Pontchartrain, about ten miles distant, where there is only a slight tide; but there is really a considerable soakage into the marshes back of the city, where a rank vegetation is produced. Garbage is in many cases thrown into the back yards or streets when not carried to a dumping ground in the vicinity of the low lands. The ground-water lies from two to four feet below the surface of the soil, and the numerous privy-vaults with imperfect brick walls and bottoms of earth render universal contamination of the soil inevitable. Water-closets are not in general use except in some of the hotels. The water supply from the Mississippi River is seldom used for drinking, inasmuch as it would require careful filtration for that purpose, but cisterns to collect and store unfiltered rain-water are chiefly depended upon; so that few people in New Orleans drink water which is free from a considerable degree of organic impurity. In a reply to a question, Colonel Hardee said that New Orleans is "generally a filthy city." So far as his observations went, yellow fever was not most prevalent nor most fatal in the dampest and filthiest localities, — a fact which corresponds with the known natural history of the disease. He suggests the propriety of frequently flushing the streets and gutters with an abundance of water from the river as a temporary expedient.

President Choppin, of the Louisiana State Board of Health, read a very clear and carefully prepared paper, in which he stated that "the sanitary condition of New Orleans has never been what a civilized community should have it be." He endeavored to show that the yellow fever of 1878 was introduced by the steamer *Emily B. Souder*, on May 23d, in the persons of two petty officers who died, according to their physicians' certificates, of bilious remit-

¹ Some of these facts were learned from replies to inquiries and in private conversation.

tent fever, and of whom one boasted that he had beaten the quarantine officer by pretending that he had neuralgia. Dr. Choppin made an autopsy of one of them, as the result of which he is positive in his belief that the case was yellow fever. The other man died at two o'clock in the morning, and was hurriedly buried eight hours later without the usual public announcement. The cases originating in New Orleans occurred toward the middle of July, so that we must allow for an incubative period of six weeks on that explanation. We might suppose that other unobserved cases were introduced later, for which the incompleteness of the quarantine and the dishonesty of those trying to evade it furnished abundant opportunity. Indeed, Dr. Choppin said that he had rarely seen a vessel which did not present to the quarantine officer a clean bill of health, and he gave repeated illustrations of the way in which skillful rogues could run through the best quarantine in spite of the most honest and competent officials. This summer, too, the quarantine, although far from being efficient, was better enforced in New Orleans than ever before.

After showing that the germ hypothesis explains the phenomena of yellow fever better than any other, and proving to his own satisfaction that the disease never develops spontaneously in the United States, Dr. Choppin stated his belief that the specific poison travels progressively and at no great distance from the ground. Sprinkling the earth with carbolic acid, which got the credit in New Orleans and Washington of having cut short an epidemic a few years ago, apparently did no good, although the health officers appeared unwilling to give up the idea that if the supply of carbolic acid were unlimited, and every germ could be isolated and treated with it, yellow fever could be thus at any time stamped out. In a word, while Dr. Choppin is not ready to say that disinfectants do no good, he considers them too feeble a weapon to be relied upon in great emergencies. According to his estimate, one half of the population of the city, whose labor was of any value, gave up their usual occupations for ninety days; there was almost an entire stoppage of commercial relations between the portions of the country invaded and the rest. The loss to New Orleans alone is calculated by him to have been approximately as follows:—

Estimated number of cases of yellow fever	25,000
Cost of ten days' sickness to each one at \$3	\$750,000
Cost of 4500 funerals at \$25 each	112,500
About two fifths of victims represent each a capital value of \$1000, amounting to	1,800,000
Remaining three fifths at \$300	810,000
Loss of time of half the industrial population — say 20,000 people — for ninety days at \$2 per day	3,600,000
Values destroyed by the epidemic	7,072,000
Commercial losses by interruption of intercourse with the surround- ing country and diversion of trade to other cities	5,000,000
Total losses	\$12,072,000
Estimated profit of the summer trade with ports where yellow fever usually prevails	\$1,500,000
Difference, or cost of the epidemic	\$10,572,000

That is to say, New Orleans probably lost enough money in a single year to have supplied the city with pure water in abundance and with good drainage. Dr. Choppin apparently does not place filth in air, soil, and drinking-water very high in the causation of yellow fever; he considers it eminently an imported disease, whose germs cannot survive the winter cold of that climate, and he is fully convinced that no ordinary quarantine can effectually keep it out. He therefore is driven to his conclusion that the only resource is in absolute commercial non-intercourse from the first of April to November with those places, notably Havana, where yellow fever prevails. According to his own theory, however, even then the latent germs might be brought indirectly by vessels from ports not infected which trade with Havana, or by smugglers through any of the numerous bayous and creeks by which the ports of the Lower Mississippi are more or less easily accessible. Dr. Austin, of the New Orleans Board of Health, read a paper in the main agreeing with Dr. Choppin.

Dr. Richardson, of the University of Pennsylvania, and Dr. Robert White, of the marine hospital service, made microscopic examinations of the blood and parts of the internal organs of persons who had died of yellow fever, but found nothing which they considered as certainly characteristic of that disease. There were many more bacteria in the blood than are commonly found, and the smaller tubules in the kidneys were crowded with micrococci, a point in their opinion deserving further examination. Dr. White's report on the nature of contagion in connection with the phenomena of yellow fever was so excellent a statement of our knowledge on that subject that it is very desirable to have his investigations continued.

In the evening Dr. Ezra M. Hunt, president of the New Jersey State Board of Health, read a clear and forcible essay on the method of studying an epidemic; it contained nothing new, but was so full of careful thought and practical suggestion that it might have been studied a month before the meeting to great advantage. An exceedingly pleasant reception by Governor Holliday closed the evening.

On Friday, the fourth day, Dr. Cabell, of the University of Virginia, was elected president of the association, Drs. J. S. Billings and S. Choppin were chosen first and second vice-presidents, and an executive committee of working men was secured for another year. Many short papers were read, generally strongly in favor of quarantine or of the importation theory, etc., but not possessing the character of thorough, impartial inquiries. Indeed, when Dr. Holliday, of New Orleans, read a paper criticising the one-sided character of the evidence which had been presented, and showed that there were very many serious gaps in the testimony to prove that the epidemic of this year was of foreign origin, although not committing himself to any theory until after a scientific investigation and statement of the whole case, he evidently "staggered" the newspaper reporters who made him in favor of local origin and spontaneous development.

In the *JOURNAL* of last week a wish was expressed for a better explanation of the exemption of Nashville than that it was spared by a kind Providence; later we got it. It seems that the Board of Health cleaned up their city a couple

of months before the epidemic appeared; a process which consisted in removing only the most evident filth on the surface,—for it is clear that the polluted soil could not be purified in that time,—in isolation of the infected refugees, and in disinfection of the trains arriving in the city. But when, after the reading of the papers, it proved on inquiry that the disinfection consisted in doing nothing to the freight cars, and in the use of bromo-chloralum for the passenger carriages, there began to be a doubt whether the explanation was an explanation after all, and whether the sanitation of the city was likely to have been any more efficient than the disinfection of the cars.

In Memphis, where the disease was especially virulent, clothing, bedding, etc., were removed to the streets to be burned; and it was suggested that the very attempts at thorough disinfection might have been a means of spreading broadcast the germs of disease.

A gentleman from Huntsville, Alabama, ventured the suspicion that filth was the most potent of the causes of yellow fever in one of the cities, when he was immediately met with the statement that his own town was as bad, for they had cholera in 1873, and diphtheria now; but it seems that the town officers had asked the physicians the cause of the cholera in 1873, and got the reply that it was filth. They introduced better drainage at once, kept a cleaner town, and attribute the failure of yellow fever to spread this year to that fact. The filth theory was evidently an unpopular one, but Dr. Atchison, of the Tennessee State Board of Health, insisted upon its preëminent importance, and Dr. A. N. Bell, a recognized authority on yellow fever, strongly held to that view, forcibly stating that non-stinking filth in the ground may be in some cases as seriously prejudicial to health and as favorable to epidemics as more obvious filth that stinks on the surface. But what could be said to any one who considers Vicksburg, with its privy-vaults in the earth, its impure water supply, surface drainage, and stagnant water-bed in front, to be "in perfect sanitary condition"? Dr. Bell held that the importation theory was by no means proven so far as the Gulf portions of the United States are concerned.

Dr. R. S. Steuart, of Baltimore, gave an interesting account of his stamping out what threatened to be a serious epidemic of yellow fever in 1876. He placed a cordon of police around the infected quarter, and at once established absolute non-intercourse with the remaining portions of his ill-drained city. All clothing, bedding, etc., were destroyed by fire; the inhabitants were all removed, and kept isolated until the sick got well or died, and those not infected had passed beyond the incubative period of the disease. The houses, passage-ways, etc., were disinfected, and the occupants were not allowed to return to their homes until cold weather. The city escaped with the loss of only forty lives.

Drs. Gihon and Turner, of the United States navy, made some sensible remarks about the filth of ships, especially the foul bilge-water, as predisposing to yellow fever, showing that absolute cleanliness is almost a sure preventive, and that an infected ship remains a source of danger for years even, if it is not put in proper order. Dr. Gihon thought dry, superheated steam or excessive cold the only complete disinfectants for thoroughly infected vessels.

It was unfortunate that the questions of temperature, rainfall, humidity of

the atmosphere, conditions of the soil, etc., were not examined and reported upon in the several places. We heard almost nothing of such statistics.

The following propositions were presented by the committee to be voted upon :—

(1.) Yellow fever is a specific disease, not indigenous to or originating spontaneously in the United States, and its appearance in this country is always due to a specific cause.

(2.) Quarantine established with such rigor and precision as to produce absolute non-intercourse will prevent the importation of the specific cause of yellow fever.

(3.) It is the duty of the general government to aid in the establishment of a practical and proper quarantine by all means in its power.

(4.) It is the duty of the general government to appoint a commission of experts to make a thorough investigation into the causes of yellow fever, and the best methods of preventing its introduction into this country, and to make such an appropriation as will permit of the securing the services of the best men, and the best means for carrying out such investigation.

(5.) That it is the duty of the general government to invite foreign nations to coöperate with it in the establishment of uniform and effective international quarantine regulations.

(6.) That whatever may be the practical value of quarantine, there is no doubt of the importance and value of internal sanitary measures in the prevention or modification of epidemic yellow fever, and that this association strongly urges upon state and municipal authorities the great amount of responsibility which rests upon them on this account at times when no disease is prevalent or threatening.

The first proposition created lively discussion. Some were opposed to the statement itself, while Dr. Howard, of the commission, Dr. Bell, and others, objected to its passage as premature and unscientific in method, which would not reflect credit on the meeting. In the quiet side talks it was urged that it must be passed to satisfy the Northwestern States, that the South demanded it, and that without it we could not get legislation from Congress. It was finally amended, on motion of Dr. Gihon, to read as follows, and was adopted by a vote of twenty-three to eleven, although strongly objected to by some members :—

(1.) Yellow fever of 1878 was a specific disease, not indigenous to or originating during that year spontaneously in the United States; and its appearance in this country was due to a specific cause.

There was no serious objection to any of the others, except on the part of a few who did not wish any resolutions passed until a more thorough investigation had been made. Number six was sent in late as an additional proposition.

The association elected many new members, and passed resolutions of thanks to Mrs. Thompson, who generously gave the money to carry out the investigation by the commission, and to the governor and other gentlemen of Richmond. The commissioners were commended; a chair of public hygiene was recommended in every medical college in the country; a national board of health

was unanimously advised, and a committee of one prominent gentleman from each State was nominated to act with officers in Washington to urge its appointment; a memorial to Congress was voted for an international arrangement with the Spanish government to investigate yellow fever in Havana, and to secure their coöperation to abate the disease. Dr. Billings's questions regarding the disease-rate for the next census returns and the cataloguing of the library in the surgeon-general's department were approved, and committees were appointed to urge their adoption. More humane methods of transporting live stock were asked for, and the committee on resolutions voted to request an inquiry into the causes and prevention of venereal diseases.

Dr. Harris's recommendation that each state board of health be entitled to one seat in the council of the society, and that these boards report vital statistics as far as possible, was also approved.

Our countrymen are too fond of making speeches, and occasionally a little too much clerical gush and Fourth-of-July oratory were indulged in for a deliberative assembly; but there was only one premeditated "burst of eloquence," and it was gratifying to find that one received by quiet smiles and faint applause. There was more clear, concise expression of views than one sees in similar societies in England or Germany. The social aspect of the whole affair was extremely agreeable. Men interested in the advancement of sanitary science had excellent opportunities of conversing with their co-workers from all parts of the country, and in getting invaluable information from one another. In that sense, the meeting was, in the highest degree, profitable. It certainly will long be remembered as the source of many delightful friendships and as a frequent reminder of the cordial good feeling throughout our profession.

THE MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.

A DISEASE which appeared, or at least was recognized, in Boston earlier than in New Orleans, which has increased in prevalence as our commerce with the West Indies has become more extensive, which has failed to visit us as an epidemic while that commerce has been for a time interrupted, — a disease, generally speaking, of cities and towns on the sea-coast, or not very high up on navigable rivers, where the summer heat day and night reaches a temperature of about 75° or over, seldom invading small villages or rural districts, and associated in Havana, its chief seat of endemic prevalence, with the grossest forms of filth, — has, during the past year, appeared in eighty villages and cities of the United States, often with the fatality of the black death of the fourteenth century, spreading desolation and terror in its path, met not seldom with the inefficient and uncertain sanitary measures of experiment, and everywhere falling where the now known laws of public health are openly neglected. In Philadelphia it decimated the city toward the close of the last century. Now it is no longer feared there, nor in those other cities which have introduced pure water supplies and tolerable sewerage. If not essentially a filth disease, as many competent observers consider it to be, it has visited in

severe form chiefly filthy ships or filthy places, although, unlike intermittent fever, its chief seat is often in the higher and less moist parts of a city, where there are also usually less obvious filth and a more susceptible population. This year it has been so widely prevalent in small towns and large, and under such a variety of circumstances, that there probably never have been in this country better opportunities for the thorough investigation of its ætiology, pathology, diagnosis, and prevention.

A commission has been appointed to investigate the epidemic. Perhaps it was not fair to have expected much from them so early, but it was certainly hoped that they would adopt a broad scientific method of inquiry, and do impartially and with a judicial weighing of negative as well as positive evidence the little which they had time to accomplish. The Public Health Association received their preliminary report with the resolution that it is the duty of the general government to appoint a commission of experts to make a thorough investigation into the causes of yellow fever and the best methods of preventing its introduction into this country. The meeting of the American Public Health Association has not in itself been attended as yet with any thoroughly satisfactory results, except in so far as steps were taken to establish a national quarantine and an advisory board of health. This has been due chiefly to a bad method of working. A multiplicity of papers are handed in at the last moment, often hastily written, and taking their chances of being read in the rush; the only thing that an overworked executive committee can do being to sift out the best reports as well as they can. There was an excellent opportunity of doing a public service if a systematic line of inquiry had been adopted, covering a few important points, and if certain persons had been appointed to investigate minutely the facts of the epidemic as coming under their observation. This opportunity was lost, and there was not even a systematic basis of inquiry established for another year. Let us hope that this may still be done, and that the meeting in Nashville a year hence may be marked by thorough work well presented to a body of men free from strong bias and ready to accept coolly the results of an inquiry exhaustive and impartial beyond any possibility of dispute.

Although we think that quarantine cannot keep out all cases of yellow fever, and that it is useless without intelligent and vigorous local sanitation to prevent occasional cases from finding a suitable soil for development and multiplication, and although we believe that too great reliance upon it tends to produce a fatal neglect of local sanitary measures, yet it is so useful that great masses of infective material can thereby be easily prevented from entering towns, and that, too, without placing any very serious obstacles in the way of commerce. That a quarantine will not, for the present at least, be effective as managed by the several States appears to us clear, and the high degree of efficiency of our marine hospital service is an assurance that a national quarantine could be as well managed. Indeed, the head of that service has good powers for organization and management; and it seems particularly desirable and appropriate that the quarantine should be under that branch of the government which has most to do with steamers and custom-houses. An advisory national board of health, if, like those of England, France, and Germany, not

composed of doctors only, and if kept free from the political influences too apt to pervade all branches of our government, promises to be of immense service in spreading information in regard to sanitary matters where it is most needed. It seems to us that the American Public Health Association this year has failed signally to extend such knowledge, and indeed fully to grasp the great question presented to them.

We might refer to South America, where yellow fever prevailed, in 1871, in Buenos Ayres, a city of about the same size as New Orleans, with a mortality of one out of every nine persons in the city. Dr. Rawson's report states that the facts of bad drainage, bad water supply, bad soil, and abounding filth will be stated plainly, "not merely because science should be in possession of the whole truth," but also because the truth may serve a useful end in stimulating efforts to improve the public health. "Investigation was idle to show how the enemy entered;" the object was to prevent a second invasion. The method of attaining that end was to send to London for a distinguished sanitary engineer to construct an adequate system of drainage, and to introduce a sufficient supply of pure water. Until the same thing is done in all our cities in all parts of the United States, we shall be in constant danger from pestilences wherever the fundamental principles of sanitary science are neglected. With pumping, as by the new Boston system, New Orleans even can be easily drained into a very large river always having a rapid current.

Finally, and most important of all, what may be expected, in the way of preventing similar scourges in the future, as a result of this terrible epidemic and of the meeting to discuss it? From the paramount importance given to measures for securing a national quarantine, from the all but universal feeling expressed that yellow fever is not spontaneously developed in our Gulf States, — a conclusion which we do not dispute, but which we do wish to see established by satisfactory evidence, — from the general unwillingness to acknowledge that filth is one of the most important factors in the causation of epidemics of fever, and from a failure to perceive that a city without horrible stinks may yet be very filthy, we fear that the preventive measures to be immediately taken will encourage a reliance upon the general government, to the neglect of cleanliness, drainage, and supplies of pure drinking-water, without which, in our opinion, the most vigorous quarantine, even to absolute forbiddance of commercial intercourse, and the wisest possible board of health in Washington, would utterly fail to secure us against an occasional introduction of the specific yellow-fever poison and another visitation from yellow fever.

MEDICAL NOTES.

— At the meeting of the Public Health Association at Richmond, Dr. Richardson, of the University of Pennsylvania, and Dr. White, of the marine hospital service, read the result of numerous microscopic observations on the pathology of yellow fever.

On account of the sensational reports that appeared in the daily press from time to time of Southern physicians having found organisms of various kinds

in large numbers in the blood of yellow-fever patients, Dr. White was deputed by the surgeon-general to report on the correctness of these observations, and visited the infected districts for that purpose, making his observations at the bedside of the patient, and transmitting duplicate specimens for examination to Professor Richardson, of Philadelphia.

No organisms bearing any direct relation to the cause of the disease were found in any of the secretions, but there was a considerable increase of those which normally inhabit the body, as would naturally be expected in the low state of vitality attending the acute infectious diseases. But in the tube casts excreted, and in the sections of liver and kidney examined with very high powers of the microscope, up to 2500 diameters, an extraordinary development of the low forms of life known as micrococci were found, in many cases completely blocking up the tubules and ducts.

The pathological significance of these the observers are hardly prepared to state, but their presence in the canals through which the bile and urine are discharged suggests the possibility of their developing to such an extent, as was certainly the case in some of the specimens exhibited, as to prevent the outflow of these important secretions, and thus produce some of the most typical symptoms of the disease.

The short time allowed for the observations, and the intention to carry them out to a much greater extent during the ensuing months, prevent more definite conclusions at present.

Assistant-Surgeon Robert White, marine hospital service, read a paper on *The Nature of Contagion: What is the Character of the Active Principle of Contagion by which Certain Diseases spread or are communicated from one Person to Another?* of which the following is an abstract:—

The numerous and extraordinary ideas formerly held about the cause of epidemics were briefly noticed; also the fact that all were being rapidly supplanted by the hypothesis that in the acute specific fevers, at least, if not in most other diseases, the contagious element is possessed of vital properties, and has a particular form. He traced the growth of the germ theory of disease from the labors of Pasteur. That these particles possess vital properties may be properly inferred from the power of reproduction that they possess. This is an attribute of organic structure only, and does not attend any chemical or physical process that we know of. The smallest particle of the contagion introduced into the system will reproduce itself, and multiply as long as it finds in the surrounding medium the conditions necessary for its development. The portability of contagion is strong evidence of both its particular and vital character. Nothing else will explain how it can be retained under circumstances unfavorable for retaining gaseous substances, and when exposed to favorable surroundings can reproduce itself. The essential symptoms of fever are waste of the nitrogenous tissues, consumption of water, increase of temperature and of the rapidity of the circulation. There is a striking analogy between these conditions and those required for the development of the low organisms to which disease germs are supposed to be allied; and the germ theory supposes that their development in the system explains the symptoms of fever. The fact that these germs cannot be seen is no evidence against

their existence. Organisms too small to be seen by the microscope may as well exist as stars too small to be seen by the telescope. It is now known that the epidemics of the plague and the small-pox that formerly decimated Europe did not arise spontaneously, and that while unsanitary conditions favor the extension of the disease in an enormous degree, they cannot originate it without the introduction of the specific germ. Most forms of contagion perish readily in pure air; therefore free exposure to the atmosphere is the best disinfectant. But the same experiments that demonstrated the particular character of contagion showed that some forms retained their power of infection for many months after being dried at a high temperature.

— Edward Hirschsohn, of Dorpat, has made numerous experiments in regard to the behavior of arsenious acid toward dialyzed iron. He sums up his results thus: "These experiments prove that *arsenious acid does not enter into combination with dialyzed iron*, either alone or in the presence of acids. The addition of ammonia or magnesia, however, causes the arsenic to enter into an insoluble compound. In consequence of the results obtained in experiments 31 to 40, I desire to warn against the use of dialyzed iron as an antidote in poisoning by arsenic, because the resulting combination parts with its arsenic in presence of acids much more readily than the ordinary antidote for arsenic." The details of these experiments will be found in *New Remedies* for November.

— Professor Lichtheim, of Jena, has accepted a call to Berne. Dr. F. Fürbringer, of Heidelberg, will take Lichtheim's chair at Jena. Dr. C. Mayerhofer, of Vienna, who is so well known to many of our readers, has left the city in which he has done such excellent teaching, and has established himself as a gynæcologist in an Asiatic city.

— The *London Lancet* takes very strong ground against the publication of reviews of medical books in lay newspapers, and urges upon the consideration of editors the fact that "when the literary production of one local practitioner is reviewed, his colleagues who have not rushed into print are placed at serious disadvantage. The man who has written a book must, it is supposed, be the better practitioner, whereas, perhaps, the truth lies in the opposite direction."

— Dr. Mannheimer (*Chicago Medical Journal and Examiner*, August) reports nine cases of whooping-cough which recovered in four to seven days under the use of intra-laryngeal insufflations of equal parts sulphate of quinine and white chalk. Six of the cases were in the spasmodic, three in the catarrhal stage.

— During a recent mountain excursion near Bormio two young Berlin physicians — Dr. Sachs, assistant in Professor Dubois-Reymond's physiological laboratory, and Dr. Salomon, assistant in Professor Frerich's wards — fell down a precipice. The former was killed; the latter escaped with a double fracture of the leg.

— We congratulate one of the witnesses in a recent case for malpractice upon the extent of his obstetric experience. He represents himself as having attended four thousand three hundred cases of delivery, and we are assured he is still a young man. The capacity of this gentleman for labors may be judged from the fact that were a student to spend his whole time in walking

through the obstetric wards of the General Hospital in Vienna it would still require years to offer him a superficial observation of this number of puerperal women.

— A correspondent who was present at the recent meeting of the Health Association at Richmond writes as follows: "The lager beer is excellent, but there is the American vice of no chairs and standing drinks. Moffatt's bell punch, whereby the state revenue is enriched by one half a cent for every glass of malt liquor consumed, and by two cents and a half for every glass of spirit, was a new revelation to the majority of the visitors, and it was quite remarkable to see how many were curious to see how the thing worked."

— Drs. Milner Fothergill and Robert Barnes, of London, have been elected associate members of the College of Physicians of Philadelphia. The number of associate Fellows is limited to twenty. The other British associates are Sir R. Christison, Sir J. Paget, Professor Aclaud, Drs. J. W. Ogle, Peacock, and Hughlings Jackson.

NEW YORK.

— There having been a good deal of complaint made recently about the adulteration of refined sugars in this city, the United States government officers have begun an investigation of the matter. Collector Merritt, of the custom-house, thinks it the duty of the Board of Health to protect the consumers of sugar from the evil effects of poisonous adulterations, and he has recently issued an order that samples of refined sugars for export should be taken in duplicate, — one for preservation in the custom-house, and the other for purposes of analysis.

— In the court of general sessions a presentment was lately made by the grand jury, in relation to the institutions upon Blackwell's Island, in which it was stated that 106,000 new cases were sent to those institutions during the last year; that although there is evidence that the Commissioners of Charities and Correction are laboring with diligence to overcome all abuses, there is "cruel overcrowding" in some of the asylums and hospitals, the Lunatic Asylum having last year 400 patients, with a capacity for only 250, and another building 126 patients, while it could only properly accommodate 66; and that it was desirable that either more accommodations should be procured, or the incurable patients be removed to other suitable quarters.

— During the past autumn a New York homœopathic practitioner of the "high potency" school has actually been engaged in bottling mosquitoes in New Jersey, with a view to employing them for therapeutical purposes. At the request of a celebrated exponent of the Hahnemannian doctrine in England, they were to be sent across the Atlantic to him, preserved in alcohol, and after their bodies had been duly "potentized" it was expected that the internal exhibition of the remedy would be a sovereign cure for mosquito-bite. That the preserved mosquitoes have been sent to England is an undoubted fact. Whether the results so sanguinely anticipated from the medicine will be realized, however, still remains to be seen.

— The thirty-fifth annual meeting of the Society for the Relief of Widows and Orphans of Medical Men was held on the evening of November 27th, at

the Academy of Medicine, when the following officers were elected for the ensuing year: president, Dr. Samuel T. Hubbard; vice-presidents, Drs. Jared Linsly, Isaac E. Taylor, and Samuel S. Purple; treasurer, Dr. J. H. Hinton. The financial statement of the society for the year ending September 17, 1878, is as follows: Balance on hand, \$7478.86; income from all sources, \$19,550.69; paid to annuitants, \$4302.75; incidental expenses, \$53.95. The total assets amount to \$123,172.35. The society has 127 members and 27 benefactors, and during the past year has extended aid to twelve widows and four children of deceased members; the highest amount paid yearly to any one person in a family being \$400.

—The thirty-second anniversary of the New York Academy of Medicine was celebrated the same evening, and the anniversary discourse this year was by Prof. Wm. H. Thomson, of the University Medical College. In consequence of the inclemency of the weather, the latter was postponed to December 5th.

—On Thanksgiving day, Mrs. Alfa Merrill, the wife of a New York physician, made her *début* upon the stage. She appeared at the Fifth Avenue Theatre, and assumed the character of Julia in *The Hunchback*.

SHORT COMMUNICATIONS.

THE NORTH GROVE STREET MORGUE.

MEDICAL EXAMINER F. A. HARRIS writes a complaint to the city council about the condition of this building. He says: It is in a dilapidated condition, the underpinning falling away, the timber rotten, and the roof freely admitting water either from rain or melted snow. There is no sufficient means of ventilation in the room used for post-mortem examinations; neither is there anywhere sufficient light in the building. The floors are cold and damp. There is no adequate means of heating the room without making the room too hot to work in. Hot water, which is much needed, is provided only by heating the amount contained in a small receptacle in the stove. The table is far behind the times in the appointments necessary for the comfort of the operator. There is no closet in which to keep the jars, measures, scales, etc., necessary in many examinations. The room itself is too small. I am informed that there has been scarcely an expenditure for the building during the past twenty years, and my own serious illness from exposure while working there attests the utter inadequacy of the place for its purpose. It is now at best a cold, damp tomb, fit only to contain bodies before burial. As difficult scientific work is expected of the medical examiners, and as an average of a hundred and upward post-mortem examinations are like to be made every year for an indefinite time in this district, it seems as though a suitable place for such work should be provided, — a place where the examiner will not only work without risk to his life, other than the ordinary and irresistible dangers of such examinations, but where he may at least have sufficient light, ventilation, and drainage, heat, and the necessary conveniences for his work, such as are provided in hospitals or in the autopsy rooms of other cities, — a place where the operator may be able to work without doing so in an atmosphere impregnated with the odors of bodies in various stages of decomposition in the adjoining room, a condition of things which at present obtains in the Grove Street Morgue. The temporary repairs which have been made by your board during the past seventeen months have failed to do away with the chief troubles, and I am sure that an examination of the premises will convince you that the place is both unsuitable and dangerous to work in.

MALPRACTICE SUITS.

MR. EDITOR, — Are you aware that the practitioner you so strenuously defended in the last number of the JOURNAL is an irregular, a homœopath, recently expelled from the Massachusetts Medical Society ?

November 30th.

Yours truly,

OBSERVER.

[We do not see what difference that makes in the legal merits of the case. — ED.]

 OBITUARY.

SAMUEL HART, A. M., M. D. — It is with much regret that we are called upon to announce the death of this venerable physician on September 3, 1878, at the ripe age of eighty-one years, nine months, and six days, at Brooklyn, Long Island. We learn from the *Kings County Journal* that Dr. Hart was born in Wakefield, Mass., November 27, 1796. His father, John Hart, was a physician of note, who served as surgeon in the American Revolution, in General Prescott's regiment. He was at the battle of Bunker Hill, and continued in the service till the close of the war. Afterward he held the position of magistrate, and was a member of the Massachusetts legislature thirteen years.

Samuel Hart, the subject of this minute, was his youngest son, and was liberally educated in both the literary and medical departments of Harvard University, taking respectively the degrees of A. B., A. M., and M. D., in the years 1817, 1820, and 1821. He practiced until 1828 in Beverly, Mass., whence he removed to Oswego, N. Y., became a member of the Oswego County Medical Society in 1829, was afterwards one of its censors, then its recording secretary, and for one year its president.

In 1855 Dr. Hart removed to Brooklyn, where he has devoted himself to medical practice almost without interruption. He was elected to membership in the Kings County Society in 1858, became a censor in 18—, which office he filled at intervals during eight years, and in 1862 he was elected president.

Dr. Hart was made a Fellow of the Massachusetts Medical Society in 1824, and in 1857 a permanent member of the New York State Medical Society. He was also a member of the American Medical Association, the Massachusetts Society of the Cincinnati, the Long Island Historical Society. Dr. Hart was a man of strict moral integrity. With him *esprit du corps* was always dominant, and one of the last expressions of his life was in these words: "I love the profession to which I have given so many years of thought, and to which I gave my son John, who died so full of promise." He then pledged to the Medical Society of the County of Kings nearly all of his medical library, and, in consonance with his desire, a committee was appointed at the August meeting of this body to receive and properly convey this valuable bequest.

In social life Dr. Hart was in the best sense domestic. He married, in 1823, Miss Charlotte Newell, of Boston, who still survives him. One daughter and one son (now a druggist in Boston) are all that remain of five children. Those of our Boston physicians who remember him as a regular attendant at the annual meeting of the Society of the Cincinnati will hear of his death with great regret.

 OBITUARY.

PROFESSOR ELI GEDDINGS died at Charleston, S. C., on October 12th, at the advanced age of nearly eighty years. Born at Newberry, his youth was spent in farming; removing to Abbeville he received a classical education. He subsequently studied medicine in the office of Dr. E. S. Davis about the years 1819 and 1820, attending lectures in the Charleston Medical School. When the Medical College of South Carolina was established, in 1824, he became a teacher in that institution, and has lectured from that time to the present, excepting at short intervals when absent in Baltimore at the medical school of that city. Dr. Geddings had a wonderful memory, and was an able lecturer and writer. He was founder and editor of the *North American Archives*.

At a recent meeting of the South Carolina Medical Society, held in honor of his memory, there was a large attendance, and addresses were made by many of the most prominent physicians of the State. Resolutions of respect were passed, and it was voted to secure a portrait of the deceased to be placed in the society's rooms.

Dr. Geddings was much respected by the community in which he practiced for so many years. One of his sons, Dr. W. W. Geddings, is a practicing physician at Aiken, S. C.

ABSTRACT OF THE BULLETIN OF THE PUBLIC HEALTH.

ISSUED BY THE SURGEON-GENERAL U. S. MARINE HOSPITAL SERVICE, UNDER THE NATIONAL QUARANTINE ACT OF 1878, FOR THE WEEK ENDED NOVEMBER 23D. No. XX.

OFFICE SURGEON-GENERAL M. H. S., WASHINGTON, November 27, 1878.

YELLOW FEVER IN THE MISSISSIPPI VALLEY.—Advices to the close of November 22d show the following number of new cases of yellow fever and deaths for the week ended on that day: There were 20 deaths in New Orleans, two deaths in Vicksburg, and two in the adjacent country, three at Delta, Miss., eight cases and four deaths at Mobile. The last case reported in Morgan City, La., occurred November 19th, the last death November 15th. During the two weeks ended November 22d there were four new cases of yellow fever and two deaths at Decatur, Ala., 33 deaths at Memphis, and two deaths at Cairo, Ill. The last case at Cairo occurred October 28th, and the last death November 15th.

It is advised that during the coming winter all of the rooms of every dwelling in the cities and towns which have suffered from yellow fever should be opened to the outer air for a sufficient length of time to subject them to a freezing temperature. Carpets, bedding, clothing, trunks, etc., should be exposed to the open air and to a temperature below the freezing point. Unless this is done, sporadic cases may be anticipated when the warm weather returns from yellow-fever poison, which is liable to survive the winter in dwellings which are kept continuously at an elevated temperature.

BALTIMORE, MD.—For the two weeks ended November 23d the average annual rate of mortality in 1000 of the population, based on the weekly mortality, was 19.2. The deaths include six from enteric fever, eight from diphtheria, and six from scarlet fever.

BOSTON, MASS.—The average annual rate of mortality for the two weeks ended November 23d was 21.9 per 1000. There were four deaths from enteric fever, 39 cases of scarlet fever and four deaths, 47 cases of diphtheria and 16 deaths.

BROOKLYN, N. Y.—During the week ended November 16th there were three cases of enteric fever and two deaths, 38 cases of scarlet fever and nine deaths, 56 cases of diphtheria and 19 deaths. The deaths from all causes show an average annual mortality of 20 per 1000 of the population.

CHARLESTON, S. C.—During the week ended November 16th there were 29 deaths from all causes, including one from diphtheria.

CHICAGO, ILL.—The average annual death-rate was 13.4 for the week ended November 9th. There were 11 deaths from diphtheria, two from scarlet and two from enteric fevers.

CLEVELAND, OHIO.—For the week ended November 23d there were three cases and three deaths from enteric fever, four cases and one death from scarlet fever, and 31 cases and nine deaths from diphtheria. There were 44 deaths from all causes.

CINCINNATI, OHIO.—During the week ended November 16th there were 101 deaths from all causes, being at the rate of 18.8 per 1000 of the population. There were 26 deaths from scarlet fever, and four from diphtheria.

MILWAUKEE, WIS.—The mortality-rate for the week ended November 16th was 10.5.

PHILADELPHIA, PA.—For the week ended November 16th the average annual rate of mortality was 16.8 per 1000. The deaths include seven from enteric fever, 15 from scarlet fever, and nine from diphtheria.

HAVANA, CUBA.—During the week ended November 16th there were 15 deaths from yellow fever, and six from small-pox. For the week ended November 23d there were 10 deaths from yellow fever, and four from small-pox.

ST. THOMAS, WEST INDIES.—For the four weeks ended October 31st there were 12 cases of yellow fever and eight deaths.

TRIPOLI, AFRICA. — A disease designated "febricula" by the local physicians prevailed during the six weeks ended October 28th, attacking 15,000 people out of a population of 20,000. No deaths have occurred. The attack lasts from six hours to five days, and leaves the patient in a very prostrate condition. The Arabs call the disease "the club," from the sufferers feeling as if they had received a severe beating.

VIENNA, AUSTRIA. — For the week ended October 19th, there were 325 deaths, being a mortality-rate of 24 per 1000. The deaths include nine from scarlet fever, and 18 from diphtheria. There were three cases of small-pox, and eight of enteric fever.

AMSTERDAM. — During the week ended October 26th there was one death each from enteric fever, typhus fever, scarlet fever, diphtheria. Total deaths 121. Rate of mortality, 20.8.

ANTWERP. — For the week ended November 2d there were 23 cases of enteric fever and four deaths. Total deaths 68. Mortality-rate 27.

ENGLAND. — Twenty large cities and towns having a population of millions show an annual rate of mortality of 22 per 1000 of the population. The deaths include four from small-pox, 200 from scarlet fever, and 19 from diphtheria.

GLASGOW. — For the two weeks ended November 2d there were 439 deaths from all causes, showing an average mortality of 21 per 1000. The deaths include 115 cases of enteric fever and 11 deaths, 69 cases of scarlet fever and 11 deaths, 20 cases of typhus fever, and six deaths from diphtheria.

JOHN M. WOODWORTH,

Surgeon-General U. S. Marine Hospital Service.

NOTE. — Hereafter the bulletins will be issued on Wednesday instead of Saturday.

COMPARATIVE MORTALITY-RATES.

	Estimated Population, July 1, 1878.	Deaths during week ending Nov. 23, 1878.	Annual Death-Rates per 1000 living.		
			For the Week.	For the Year 1877.	Mean for ten Years, '68-77.
New York.	1,093,171	461	21.94	23.42	28.71
Philadelphia.	876,118	295	17.51	18.80	21.54
Brooklyn.	549,438	184	17.41	21.51	25.50
Chicago.	460,000			17.83	22.39
Boston.	375,476	128	17.73	20.10	24.34
Providence.	100,000	38	19.76	18.81	19.20
Lowell.	55,798	18	16.77	19.09	22.50
Worcester.	54,937	18	17.05	20.06	22.30
Cambridge.	53,547	15	14.56	18.69	20.83
Fall River.	53,207	19	18.57	21.35	24.96
Lynn.	35,528	11	16.11	20.42	19.67
Springfield.	33,981	8	12.25	16.02	19.77
Salem.	27,140	11	21.07	20.38	21.15

THE METRIC SYSTEM IN MEDICINE.

OLD STYLE.

mj. or gr. i. equals
 fʒi. or ʒi. equals
 fʒi. or ʒi. equals

METRIC.

Gms.

.06
 4
 32

The decimal line instead of *points* makes errors impossible.

As .06 (Drug) is less than a grain, while 4. and 32. (Vehicle) are more than the drachm and ounce, there is no danger of giving too large doses of strong drugs.

C. C. used for Gms. causes an error of 5 per cent. [excess].

A teaspoon is 5 Gms.; a tablespoon, 20 Gms.